

CLAIMS

What is claimed is:

1. A semiconductor package, comprising:
 - a semiconductor chip having a first surface and a second surface;
 - 5 a plurality of leads disposed around the chip and having the same height as the semiconductor package, with strengthening structures being formed on sides of the leads;
 - a plurality of connecting mechanisms formed on the leads and extending from surfaces of the leads toward the chip, for being electrically connected to the first surface of the chip;
 - and
 - 10 an encapsulant for encapsulating the chip, the leads and the connecting mechanisms, with at least the second surface of the chip and upper and bottom surfaces of the leads being exposed to the outside of the encapsulant.
2. The semiconductor package of claim 1, wherein the connecting mechanisms are electrically connected to the chip by means of metal wires having two ends thereof respectively
- 15 welded at the first surface of the chip and the connecting mechanisms.
3. The semiconductor package of claim 1, wherein the connecting mechanisms extend to a position above the first surface of the chip and are electrically connected to the chip through solder balls by a TAB (tape automated bonding) process.
4. The semiconductor package of claim 1, wherein the leads formed with the connecting
- 20 mechanisms have an integral cross section of a L-like shape, an inverted T shape, a cross-like shape or an inverted-L shape.

5. The semiconductor package of claim 1, wherein the strengthening structures are sides having gradients.
6. The semiconductor package of claim 1, wherein the strengthening structures are protrusions formed on the sides of the leads.
- 5 7. The semiconductor package of claim 1, wherein the strengthening structures are embossed patterns formed on the sides of the leads.
8. The semiconductor package of claim 1, wherein the strengthening structures are a plurality of recess holes formed on the sides of the leads.
9. The semiconductor package of claim 1, wherein the strengthening structures are a
10 plurality of protruding points formed on the sides of the leads.
10. A fabricating method of a semiconductor package, comprising the steps of:
 - providing a lead frame having a plurality of leads extending inwardly from a frame of the lead frame, wherein the leads are formed with strengthening structures on sides thereof, and connecting mechanisms are on surfaces of inner sides of the leads;
 - 15 attaching a supporting carrier to a bottom surface of the lead frame;
 - mounting a semiconductor chip having a first surface and a second surface in a space on the carrier, wherein the space is predefined by the frame of the lead frame and the leads;
 - electrically connecting the first surface of the chip to the corresponding connecting mechanisms of the leads;
 - 20 performing a molding process to form an encapsulant in the space defined by the frame of the lead frame and the leads;
 - removing the carrier; and

performing a singulating process to form individual semiconductor packages.

11. The fabricating method of claim 10, wherein the connecting mechanisms are electrically connected to the chip by means of metal wires having two ends thereof respectively welded at the first surface of the chip and the connecting mechanisms.
- 5 12. The fabricating method of claim 10, wherein the connecting mechanisms extend to a position above the first surface of the chip and are electrically connected to the chip through solder balls by a TAB (tape automated bonding) process.
13. The fabricating method of claim 10, wherein the leads formed with the connecting mechanisms have an integral cross section of a L-like shape, an inverted T shape, a cross-like
- 10 shape or an inverted-L shape.
14. The fabricating method of claim 10, wherein the strengthening structures are sides having gradients.
15. The fabricating method of claim 10, wherein the strengthening structures are protrusions formed on the sides of the leads.
- 15 16. The fabricating method of claim 10, wherein the strengthening structures are embossed patterns formed on the sides of the leads.
17. The fabricating method of claim 10, wherein the strengthening structures are a plurality of recess holes formed on the sides of the leads.
18. The fabricating method of claim 10, wherein the strengthening structures are a plurality
- 20 of protruding points formed on the sides of the leads.
19. The fabricating method of claim 10, wherein the molding process utilizes upper and lower molds with no mold cavity.

20. The fabricating method of claim 10, wherein the encapsulant is formed with at least the second surface of the chip and upper and bottom surfaces of the leads being exposed to the outside of the encapsulant.